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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/581,566

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Bruce H. Lipshutz

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EXAMINER

CLARK, SARA E

ART UNIT

PAPER NUMBER

4121

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/581,566	<b>Applicant(s)</b> LIPSHUTZ ET AL.	
	<b>Examiner</b> SARA E. CLARK	<b>Art Unit</b> 4121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-47 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.  | 6) <input type="checkbox"/> Other: ____.                          |

### DETAILED ACTION

This is a 35 U.S.C. 371 (national stage) application of PCT/US04/40565, filed 12/3/2004, which claims priority to provisional application 60/527,513, filed 12/5/2003. Claims 1-47 are pending.

### *Restrictions*

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

- **Group I:** claims 1-9, drawn to methods of making a compound of formula III;
- **Group II:** claims 10-28, drawn to a method of carboaluminating an alkyne;
- **Group III:** claims 29, 30, and 33-36, drawn to a method of separating formulae VII and XXXIX;
- **Group IV:** claims 31-32, drawn to a method of separating compounds **13** and **14**;
- **Group V:** claims 37-40 and 43, drawn to a compound;
- **Group VI:** claims 41-42, drawn to a compound of formula I;
- **Group VII:** claims 44-47, drawn to a mixture of compounds of formulae III and IX.

2. As set forth in Rule 13.1 of the Patent Cooperation Treaty (PCT), "the international application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept." Moreover, as stated in PCT Rule 13.2, "where a group of inventions is claimed in one and the same international

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application, the requirement of unity of invention referred to in Rule 13.1 shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features." Furthermore, Rule 13.2 defines "special technical features" as "those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art."

3. The inventions listed as Groups I through VII do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack a shared corresponding special technical feature. As recognized by MPEP §1850,

Lack of unity of invention may be directly evident "*a priori*," that is, before considering the claims in relation to any prior art. . . For example, independent claims to A + X, A + Y, X + Y can be said to lack unity *a priori* as there is no subject matter common to all claims.

The following summary demonstrates that Groups I through VII do not share common subject matter, and hence do not define a single general inventive concept.

Group	Ind. claim	Directed to
I Claims 1-9	1	Making III by contacting 7a or 24 with 4 in the presence of a coupling catalyst
	2	Making III by (a) transforming 27 into 28, then (b) contacting 28 with 4 in the presence of a coupling catalyst
	6	Making III by (a) transforming 27 into 35, (b) oxidizing 35 to 24, then (c) contacting 24 with 4 in the presence of a coupling catalyst
	7	Making III by (a) transforming 23 into 36, (b) contacting 36 with 4 to get 37, In the presence of a coupling catalyst, (c) deprotecting 37 to get 38, then (d) oxidizing 38
II Claims 10-28	10	Method of carboaluminating an alkyne (no formulae recited)
III Claims 29, 30,	29	Method of separating 7 and 39 by (a) contacting with a reactive species, then (b) separating

33-36	33	Method of separating 7 and 39 by (a) contacting with a reactive species, then (b) separating
IV Claims 31-32	31	Method of separating <b>13</b> and <b>14</b> by (a) contacting with reducing agent, (b) then base, (c) then separating the anion
V Claims 37-40, 43	37	Compound selected from 20-26
VI Claims 41-42	41	Compound I
VII Claims 44-47	44	Compound mixture of III and 9

Further, the International Search Report concludes that unity of invention is lacking, on that grounds that "[t]he compounds defined by Groups I-VII lack a significant structural element qualifying as the special technical feature that defines a contribution over the prior art. The compounds contain a six-membered ring system that does not define a contribution over the prior art. The substituents on the structure and saturation of the ring system vary extensively and when taken as a whole result in vastly different compounds. Accordingly, unity of invention is considered to be lacking and restriction of the invention in accordance with the rules of unity of invention is considered proper" (Box III, Observations where unity of invention is lacking, p. 4, ISR dated 6/15/2005). Therefore, the claims are not so linked within the meaning of PCT Rule 13.2 so as to form a single inventive concept, and unity between Groups I through VII is broken.

4. The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and the product claims are subsequently found allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for

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rejoinder. All claims directed to a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103 and 112. Until all claims to the elected product are found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowable product claim will not be rejoined. See MPEP § 821.04(b). Additionally, in order to retain the right to rejoinder in accordance with the above policy, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Election of Species***

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6. This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

- If Applicant elects Group I, define R1, R2, R3, R4, R7, R9, R10, L, M, X, X', Z', n, p, and any other variables needed to uniquely identify the compound(s) recited in claims 1-9.
- If Applicant elects Group II, define R1, R2, R3, R7, R9, R10, R20, L, M, X, Y1, n, p, s, x, and any other variables needed to uniquely identify the compound(s) recited in claims 10-28.
- If Applicant elects Group III, define R1, R2, R3, X, and any other variables needed to uniquely identify the compound(s) recited in claims 29, 30, and 33-36.
- If Applicant elects Group IV, define R1, R2, R3, Z, and any other variables needed to uniquely identify the compound(s) recited in claims 31-32.
- If Applicant elects Group V, define R1, R2, R3, R4, R5a, R7, R7a, R9, R10, R11, R12, Y, and any other variables needed to uniquely identify the compound(s) recited in claims 37-40 and 43.
- If Applicant elects Group VI, define R1, R2, R3, R4, R5, R6, R7, R8, Y, and any other variables needed to uniquely identify the compound(s) recited in claims 41-42.
- If Applicant elects Group VII, define R1, R2, R3, n, and any other variables needed to uniquely identify the compound(s) recited in claims 44-47.

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Applicant is required, in reply to this action, to elect a single species to which the claims shall be restricted if no generic claim is finally held to be allowable. Specifically, Applicant is required to define each of XX and any additional variables as required for a particular species (a species, for example, is ethyl, NOT alkyl). Upon Applicant's election of species, the result must provide a single chemical species. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election. Currently, claims 1, 2, 6, and 7 are generic to Group I; claim 10 is generic to Group II; claims 29 and 33 are generic to Group III; claim 31 is generic to Group IV; claim 37 is generic to Group V; claim 41 is generic to Group VI; and claim 44 is generic to Group VII.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a). Currently, claims XX are generic.

7. The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons. Each chemical species contains a distinct moiety such that each chemical species is of a dissimilar nature which would be expected to possess divergent properties and biological activities. For example, the method of claim 10 can produce a diverse array of



aluminum-containing organometallic compounds, not limited to the biologically active benzoquinones recited in Groups I and III through VII. Therefore, the species lack the same or corresponding special technical features, and thus cannot be considered to constitute a single general inventive concept.

**8. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species to be examined** even though the requirement may be traversed (37 CFR 1.143) **and (ii) identification of the claims encompassing the elected species**, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

The election of the species may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the election of species requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected species.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the species unpatentable over the

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prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other species.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SARA E. CLARK, whose telephone number is (571) 270-7672. The examiner can normally be reached Mon-Thu, 7:30 am - 5:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Nolan, can be reached at (571) 272-0847. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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SEC

/Patrick J. Nolan/

Supervisory Patent Examiner, Art Unit 4121